VIABILITY OF NEWBORN PIGLETS UNDER THE SEGOVIA (SPAIN) SUCKLING PIGLET´S GUARANTEE BRAND FED AN ALGAL BETA-1,3-GLUCAN

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INTRODUCTION

Piglets are usually born with an iron (Fe) deficiency. For those farms working on the production of the Piglets Under the Segovia Suckling Piglet Guarantee Brand, supplying parenteral Fe to the animals is not allowed, thus creating an extra challenge to the piglets.

OBJECTIVES

Determine the effect of the addition of an immune modulator, algal beta-1,3-glucan (Aleta™, Kemin) to the sow's diet during the last third of the gestation period, and throughout lactation on some hematological and growing performance parameters closely related to the viability of the newborn piglet.

MATERIALS AND METHODS

EXPERIMENTAL DESIGN:

Sows were randomly assigned to two groups. The trial diets were given during the last four weeks of gestation and throughout lactation. A summary of the trial design can be seen on table 1.

	Treatment	
Group	GnT (n=31)	Basal diet
	GT (n=37)	Basal diet + 1 g Aleta™ / sow / day

Table 1. Trial design

METHODS:

- Hematological parameters: Haemoglobin, hematocrit, IgA in blood serum samples from 60 GnT and 60 GT piglets collected 5 to 7 days post farrowing. Blood from 25 piglets was collected before the trial to obtain a base line.
- Performance parameters: Number of born alive, body weight at birth, mortality, days to wean and number of weaned piglets.
- Statistical analysis: Program SAS Enterprise 7.1.

RESULTS

A summary of the results can be seen on table 2.

	BEFORE TRIAL (base line)		GnT		GT		P value		
	Average	**σ**	**Average**	**σ**	**Average**	**σ**	**Treatment**	**Parity Nº**	**Tte*PN**
HEMATOLOGICAL & IMMUNOLOGICAL PARAMETERS									
Haemoglobin, g/dL	6.31	±1.15	7.19	±1.28	8.06	±1.06	**0.0002**	0.3494	0.002
Hematocrit, %	26.70	±4.04	28.14	±4.56	31.57	±3.98	0.0001	0.1924	0.0083
IgA, mg/mL			34.73	±16.64	49.80	±8.17	0.0175	0.143	0.3714
ZOOTECHNICAL PARAMETERS									
Weight at birth, kg			1.377	±0.349	1.496	±0.344	0.0007	0.0001	0.0335
Born alive, n			13.46	±3.28	14.00	±2.85	0.185	0.1159	0.6395
Days to wean			26.26	±3.84	24.28	±3.08	0.509	0.0001	0.0001

Table 2. Summary of the trial results

Blood concentration of IgA for both groups is shown in Figure 1.

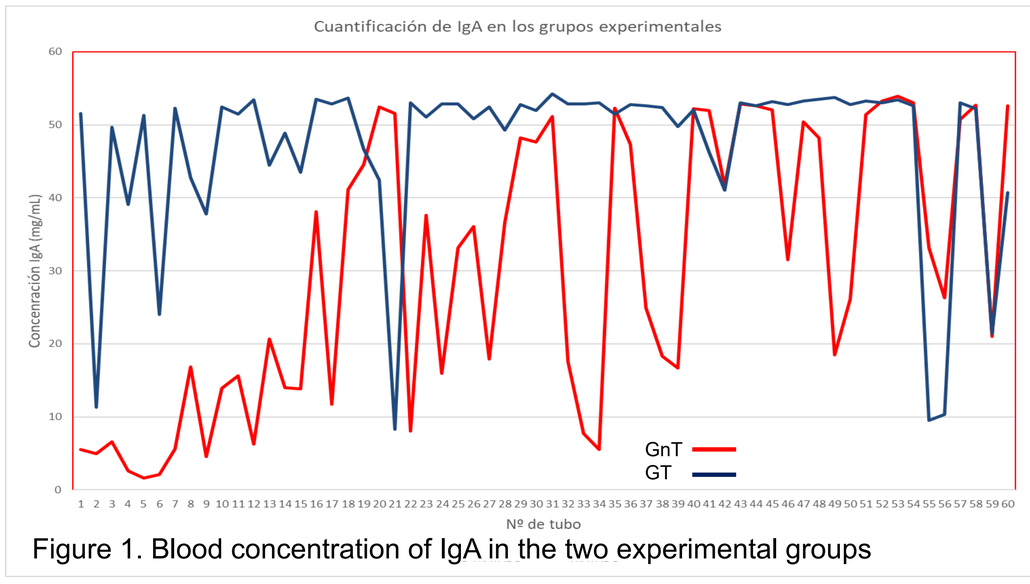

Figure 1. Blood concentration of IgA in the two experimental groups

DISCUSSION AND CONCLUSIONS

1. Haemoglobin, hematocrit and serum IgA for wk-old piglets under the Segovia Suckling Piglet Guarantee Brand - not referenced so far to the authors´ knowledge - were determined.
2. Adding an immune modulator to the sows´ diet improved immunological and hematological parameters in the suckling piglets, with no negative effect on the organoleptic quality of the roasted meat, figure 2.
3. Adding an immune modulator during end of gestation and lactation improved viability of newborn piglets during the lactation period (Quiles & Hevia, 2003; Salmon, 2000; Bandrick, 2014; Vázquez et al., 2020).
4. An improvement in some zootechnical parameters: `bodyweight at birth` and `days to wean` could be observed.
5. Further studies should be planned to evaluate if this algal beta- 1,3-glucan can elicit other improvements in the productive parameters and/or carcass quality of the Piglets Under the Segovia Suckling Piglet Guarantee Brand.

Figure 2. Piglet carcasses – a) with undesirable darkened meat; b) with the desired white aspect of the Cochinillo de Segovia Brand, and c) roasted piglet with the desired Golden look

CONCLUSION

Adding an immune modulator to the sows´ diet improved immunological and hematological parameters in the suckling piglets, with a resulting improved viability and performance.